California Bay-Delta Program

Water Use Efficiency Program Multi-Year Program Plan (Years 4-7)

Implementing Agencies:
Department of Water Resources
State Water Resources Control Board
United States Bureau of Reclamation

August, 2003



Goals and Objectives

The goal of the Water Use Efficiency (WUE) Program is to advance the implementation of cost-effective water conservation and recycling practices throughout the State that contribute to California Bay-Delta Program water supply reliability, water quality, and ecosystem restoration goals. These practices include agricultural water conservation, urban water conservation, water recycling, and wetlands water management.

The CALFED Record of Decision (ROD) identified several WUE commitments which fall into four broad implementation categories:

• Assurances, Science, Monitoring, and Evaluation

- Provide credible assurances to policy-makers and stakeholders that the WUE
 Program is being implemented aggressively and in accordance with the ROD.
- Support and inform sound water management decisions.
- Verify results of WUE actions.
- Develop quantified performance measures (including agricultural quantifiable objectives).
- Engage in adaptive management.

Water Conservation and Recycling Loans and Grants

- Facilitate implementation of WUE actions at the local level by cities, water suppliers, and farmers.
- Use state and federal grants to help local entities implement WUE practices that are not locally cost effective but still contribute to California Bay-Delta objectives.
- Use state and federal low interest loans to help local entities overcome financial barriers to WUE implementation.

• Water Conservation and Recycling Technical Assistance

- Provide technical assistance to help local entities overcome technical hurdles in recycling water.
- Support and provide outlets for scientific research, public awareness on water recycling production and use.
- Develop partnerships with local and regional entities to: (1) assess the costs, benefits, and feasibility of potential WUE projects; (2) determine the best approach to implement WUE actions; (3) effectively prepare grant and loan applications; and (4) comply with WUE reporting requirements (e.g. related to urban water conservation certification).

• Oversight and Coordination

- Provide guidance to WUE implementing agencies in interpreting the ROD.
- Employ methods of informal communications, such as staff-level meetings and conference calls with agency staff dissemination of information.
- Engage in formal communications as necessary, such as reports to the California Bay-Delta Authority, the Bay-Delta Public Advisory Committee, and the WUE Subcommittee.

Accomplishments

Assurances, Science, Monitoring, and Evaluation

- Developed a staff draft Framework for Certification of Urban Best Management Practices (BMP) through an
 ad hoc stakeholder process. (Led by the California Bay-Delta Authority (CBDA); participation by DWR,
 SWRCB & USBR.)
- Developed and adopted the Agricultural Milestones, a process to evaluate the regional progress of agricultural water conservation and identify barriers to implementation. (Led by CBDA; participation by DWR & USBR.)
- Made progress on a draft definition of appropriate urban and agricultural water use measurement (including surface and groundwater). (Led by CBDA; participation by DWR & USBR.)
- Made progress on developing quantified WUE performance measures. Worked with the Agricultural Water Management Council to incorporate agricultural Quantifiable Objectives into the economic evaluation process for selecting agricultural efficient water management practices. (Jointly led by DWR and CBDA.)
- Worked with the Science Program to develop Science Application Advisory Committee to ensure that WUE-related work is practical while still based upon the best available science. Incorporated concepts from the Science Application Advisory Committee into the 2004 WUE Proposal Solicitation Package to improve the monitoring and evaluation of WUE projects. (Led by DWR; participation by USBR and CBDA.)
- Developed the scope of the WUE independent Science Review Panel and began recruiting panelists. (Led by CBDA; participation by DWR, USBR, and SWRCB.)

Water Conservation and Recycling Loans and Grants

- Provided financial incentives for water use efficiency by issuing sixty-nine urban water conservation grants and 23 agricultural water conservation grants for a total of 40,775 acre-feet estimated annual water savings and an expected total water savings of 754,621 acre-feet from 2001-2003. (Led by DWR; in coordination with USBR and CBDA.)
- Facilitated a water recycling stakeholder workshop. Approved a \$1 million grant to the WateReuse Foundation to conduct water recycling research in 11 specified areas in 2001. Approved amendment to existing WateReuse Foundation contract and increased the contract amount to an additional \$1 million in 2003. (Led by SWRCB, participation by DWR & CBDA.)
- Issued \$13,569,000 in grants to water suppliers through the Water Conservation Field Services Program. (Led by USBR.)
- Reserved \$600,000 of water recycling research funds for the facilitation of Recycled Water Task Force.
 Work will be completed June 30, 2003 with submittal of final report to the legislature. (Jointly led by SWRCB and DWR.)
- Awarded six water recycling loans totaling \$72 million and committing all water recycling construction loan funds, including 1984 Bond law funds. Additionally, \$20 million of State Revolving Loan funds have been committed for water recycling projects. Projects receiving loan funding contribute to a proposed increase of 36,000 acre-feet per year of recycled water. Awarded 20 water recycling grants to local agencies totaling \$57 million, the total amount of water recycling construction grant funds available from Proposition 13 (includes remaining Proposition 204 funds). Projects receiving loan funding contribute to a proposed increase of 36,000 acre-feet per year of recycled water. (Led by SWRCB.)
- Made progress on developing an on-farm WUE incentive program. Held six meetings throughout the central
 valley to gather input from producers and others regarding the kind and administration of programs that
 would be of value. A final proposal will be presented to WUE in September 2003. (Led by NRCS.)

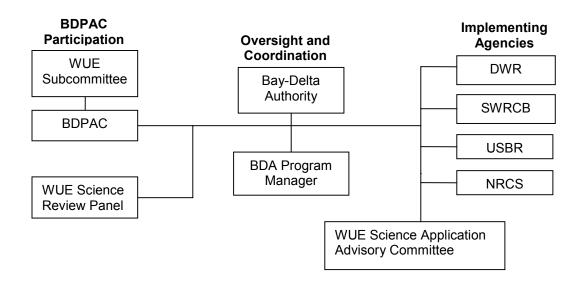
Water Conservation and Recycling Technical Assistance

- Continued to provide technical, biophysical, and engineering-oriented knowledge on water recycling and
 desalination issues in collaboration with the State Water Resources Control Board (SWRCB) and
 Department of Health Services (DHS), formed and implemented California Recycled Water Task force called
 for by Assembly Bill No. 331 (Goldberg). The Task Force created 6 different workgroups to tackle issues of
 concern. Organized 28 separate open meetings of the Task Force and its workgroups, developed 6 white
 papers, and prepared the draft final Task Force report. (Led by DWR.)
- Provided financial assistance to help start two new Mobile Laboratories in Tehama and Siskiyou counties.
 Provided financial assistance to an existing Mobile Laboratory in Kern County to provide 25 evaluations per year outside their service area. (Led by DWR.)
- Reprinted and disseminated several water use efficiency brochures, articles and the Water Conservation News. (Led by DWR.)
- Assisted local agricultural water agencies to install seven new CIMIS weather stations. Collected, processed, analyzed, and disseminated CIMIS data and provided trouble-shooting assistance to maintain the system and resolve problems with cooperator CIMIS weather station. Contracted with the Center for Irrigation Technology for On-farm Drainage Reduction, including four workshops per year. Participated with the California Rural Water Association to present three workshops related to agricultural water conservation and irrigation. Partnered with the University of California Cooperative Extension to conduct 6 workshops on irrigation scheduling, and promoted the agricultural loan program during 6 Drought Preparedness Workshops. CIMIS participated in several workshops throughout the State to inform the public about the CIMIS program, how to utilize CIMIS data, and how to become a CIMIS cooperator. (Led by DWR.)
- Conducted urban water management plan workshops, provided technical assistance to the California Urban Water Conservation Council, published the Draft Guidebook for Implementation of Senate Bill 610 and Senate Bill 221 of 2001, and conducted workshops on those bills throughout California. (Led by DWR.)
- Facilitated technical assistance to water suppliers and water users through the Water Conservation Field Services program (see Loans and Grants, above). (Led by USBR.)
- Established criteria for Refuge Water Management Plans and incorporated agricultural Quantifiable Objectives on Wetlands. (Led by USBR.)
- Provided technical assistance to growers throughout the state for the adoption of new irrigation equipment and improved water management techniques. (Led by NRCS.)

Oversight and Coordination

 Provided guidance to WUE agencies in interpreting the ROD and facilitated communications. Convened the WUE Subcommittee to the BDPAC. (Led by CBDA.)

Program Structure



Agency	Roles and Responsibilities
California Bay-Delta Authority	 Co-Lead agency on Science & Monitoring and Quantifiable Objectives Lead agency on Water Measurement, Certification, and Oversight & Coordination Convener of WUE Subcommittee and WUE Science Review Panel
Department of Water Resources	 Co-Lead agency on Science & Monitoring and Quantifiable Objectives Lead agency on Agricultural Loans, Agricultural Grants, Urban Loans, Urban Grants, Agricultural Technical Assistance, Urban Technical Assistance, and Water Recycling Technical Assistance Convener of the WUE Science Application Advisory Committee
U.S. Bureau of Reclamation	 Co-Lead agency on Science & Monitoring, Quantifiable Objectives, Agricultural Grants, Urban Grants, Agricultural Technical Assistance, Urban Technical Assistance, Water Recycling Grants, and Water Recycling Technical Assistance Lead agency on Managed Wetlands Grants and Managed Wetlands Technical Assistance
State Water Resources Control Board	 Co-Lead agency on Science & Monitoring Lead agency on Water Recycling Loans, Water Recycling Grants, and Water Recycling Research Grants
Natural Resources Conservation Service	Lead agency on Agricultural Grants (farm) and Agricultural Technical Assistance (farm)

Major Activities (2004 through 2007)

Assurances, Science, Monitoring, and Evaluation

Evaluate past and future WUE cost and performance. The primary deliverable for this activity will be the
completion of the ROD specified Comprehensive Evaluation of Year 4 WUE Evaluation. The results of this
evaluation will be used by policy-makers to determine not only the continued level of funding for future WUE
projects but for the future funding of other water management actions (such as surface storage) as well.
(Led by DWR; participation by CBDA, USBR, SWRCB.)

Schedule: ongoing

Facilitate the evaluation of programmatic performance of the WUE element by developing WUE
performance measures, including quantitative goals for the WUE program and indicators of the progress
towards achieving those goals. This includes the development, refinement, and evaluation of Quantifiable
Objectives. Staff will also monitor the performance of WUE projects through credible methods that estimate
the cost and performance of WUE projects. Performance may be measured by the volume of water
conserved or recycled or through other qualitative or quantitative means. (Jointly led by DWR and CBDA;
participation by USBR and SWRCB.)

Schedule: ongoing

• Continue to strive for a balance between making the proposal and implementation process as accessible as possible to all agencies involved in water use efficiency and incorporating more scientific measures into the program. (Led by DWR; participation by CBDA and USBR.)

Schedule: ongoing

Continue to convene the WUE Science Application Advisory Committee to provide guidance on the practical
application of science concepts. (Led by DWR; participation by USBR and CBDA.)

Schedule: ongoing

Form and convene the WUE Science Review Panel to provide independent scientific advice and review.
 (Led by CBDA; participation by DWR, USBR, SWRCB.)

Schedule: ongoing

Water Conservation and Recycling Loans and Grants

Staff will continue to work toward a simplification of the contracting process and pursue organizational
changes that will facilitate the process. Staff will 1) prepare and distribute WUE PSP 2) conduct 2004 PSP
Workshops 3) review and select PSP proposals 4) generate 2004 contracts. The Governor's Budget
indicates funding levels under Proposition 50 of approximately \$35 million each year from 2004 through
2007 (split evenly between urban and agricultural projects). (Led by DWR; participation by CBDA, USBR,
SWRCB.)

Schedule: ongoing

• The Governor's budget includes \$25.5 million for water recycling grants for the state fiscal year 2003/2004, and \$16.5 million for 2004/2005 of Proposition 50 funds. The initial \$10 million of Proposition 50 funds appropriated for fiscal year 2002/2003 have been encumbered for planning and construction grants to local agencies. Funding criteria adopted by the SWRCB for the previous Proposition 13 program was used for the Proposition 50 grant funding process. (Led by SWRCB; participation by CBDA.)

Schedule: ongoing

 In Fiscal Year (FY) 2003, Reclamation's MP Region water conservation staff is expected to award \$2,290,000 in contracts and grants for agricultural and urban water conservation.

Schedule: ongoing

Water Conservation and Recycling Technical Assistance

- Work with the California Urban Water Conservation Council (CUWCC) in the accomplishment of the following:
 - Refine Urban BMP reporting database
 - Determine revenue impacts of water conservation
 - Support water agencies preparing Urban Water Management Plans
 - Public Commercial Industrial and Institutional water use efficiency leaflets
 - Determine water conservation potential of various ET controllers
 - Publish landscape water use efficiency leaflets
 - Develop a database of mobile irrigation evaluation results (Led by DWR)

Schedule: ongoing

Provide ongoing assistance to agricultural water suppliers by providing information to implement efficient
water management practices, and help local agencies in their efforts to prepare Water Management Plans.
(Led by DWR.)

Schedule: ongoing

Continue to develop the Draft Criteria for water management on wetlands. Through the WCFSP,
Reclamation will provide technical assistance to its agricultural and urban contractors. These efforts can be
seen through agreements with Cal Poly San Luis Obispo's Irrigation Training and Research Center,
California Farm Water Coalition, Fresno State Center for Irrigation Technology, Universities of CaliforniaRiverside, California State Universities San Bernardino and Chico, and the Water Education Foundation's
Project Water Education for Teachers. USBR anticipates funding for FY 2004 to reach \$2,328,000. (Led by
USBR.)

Schedule: ongoing

• Continue to provide technical assistance to producers throughout the state for the adoption of new irrigation equipment and improved water management techniques. (Led by NRCS.)

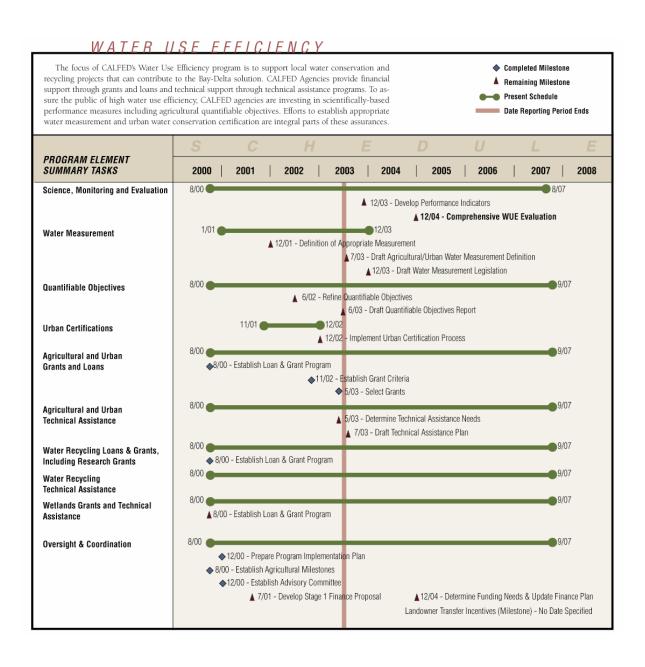
Schedule: ongoing

Oversight and Coordination

 Continue to convene WUE Subcommittee and WUE Science Review Panel meetings. Continue to provide guidance in interpreting the ROD to participating agencies to meet the goals and objectives of the WUE program. (Led by CBDA.)

Schedule: ongoing

Schedule



Year 4 Activities (2004)

Assurances, Science, Monitoring, and Evaluation

Evaluate past and project future WUE cost and performance. The primary deliverable for this activity is the
completion of the ROD specified Comprehensive Evaluation of Year 4 WUE Evaluation. The results of this
evaluation will be used by policy-makers to determine not only the continued level of funding for future WUE
projects but for the future funding of other water management actions (such as surface storage) as well.
(Led by DWR; participation by CBDA, USBR, SWRCB.)

Schedule: Completion Draft Report by June 2003

Complete ROD-specified assurances milestones including the definition of appropriate water use
measurement, development of water use measurement legislation, and developing a process to certify
urban BMP implementation. (Led by CBDA; participation by DWR, SWRCB, USBR.)

Schedule: December 2003

 Convene the WUE Science Application Advisory Committee periodically to provide advice on conducting science and evaluation tasks. Evaluation of past WUE-funded projects will be completed in Year 4. (Led by DWR; participation by CBDA, USBR.)

Schedule: Not yet determined

 Develop a set of user guides intended to assist Central Valley Project contractors with estimation of benefits for projects in water use efficiency. The user guides will also identify opportunities and constraints of water use efficiency projects at the farm level. (Led by USBR; participation by DWR and CBDA.)

Schedule: Completion September 2004

Water Conservation and Recycling Loans and Grants

 Issue the 2003 WUE PSP. This Proposal Solicitation Package will be issued in the Fall 2003; proposals will be due in February 2004; and grants will be awarded in Spring 2004. (Led by DWR; participation by USBR, CBDA, and SWRCB.)

Schedule: Contracts issued by Summer 2004

 The 50 projects funded through Senate Bill 23 General Funds in 2001 are reaching completion with contracts expiring June 30, 2003. Present a comprehensive report on the results of these projects. (Led by DWR.)

Schedule: Fall 2003

 The Governor's budget includes \$25.5 million for water recycling grants for the state fiscal year 2003/2004, and \$16.5 million for 2004/2005 of Proposition 50 funds. The initial \$10 million of Proposition 50 funds appropriated for fiscal year 2002/2003 have been encumbered for planning and construction grants to local agencies. Funding criteria adopted by the SWRCB for the previous Proposition 13 program was used for the Proposition 50 grant funding process. (Led by SWRCB.)

Schedule: Completion ongoing

Continue water recycling research projects. (Led by SWRCB.)

Schedule: Completion May 2003

Finalize Refuge Water Management Plan Criteria. (Led by USBR.)

Schedule: Completion Fall 2003

NRCS is in the last year of a three year CALFED agreement to develop an on-farm component of the WUE program.

Schedule: Completion September 2003

Water Conservation and Recycling Technical Assistance

Continue collaborating with the University of California, USDA-ARS, the Irrigation Training and Research
Center (ITRC) at California State Polytechnic University, San Luis Obispo and other research institutions to
further our understanding of key WUE technologies. (Led by DWR.)

Schedule: ongoing

- Continue to work with the California Urban Water Conservation Council on a variety of projects including the following:
 - Refine Urban BMP reporting database
 - Determine revenue impacts of water conservation
 - Support water agencies preparing Urban Water Management Plans
 - Public Commercial Industrial and Institutional water use efficiency leaflets
 - Determine water conservation potential of various ET controllers
 - Publish landscape water use efficiency leaflets

Schedule: ongoing

Continue to work with the Agricultural Water Management Council. (Jointly led by DWR and USBR).

Through the Water Conservation Field Services Program (WCFSP), provide technical assistance to their agricultural and urban contractors. (Led by USBR.)

Schedule: ongoing

Oversight and Coordination

• Draft Elements of Urban Water Conservation Certification Legislation Complete the definition of Appropriate measurement and draft water measurement legislation.

Schedule: June 2004

 Continue to convene WUE Subcommittee and WUE Science Review Panel meetings. Continue to provide guidance in interpreting the ROD to participating agencies to meet the goals and objectives of the WUE program. (Led by CBDA.)

Schedule: Ongoing

Integration with the Science Program

The CALFED Record of Decision (ROD) recognized that there are significant overlaps between California Bay-Delta Program Elements and called for an integrated approach to addressing Program goals. Program managers have recently met to discuss, and will continue to work together to implement a coordinated scientific integration process.

The critical unknowns related to WUE science are the performance of the WUE-funded projects and refining quantification of future water savings. The following actions are needed to address the unknowns:

- Developing performance measures and evaluating the results of the individual and collective (within a region) WUE-funded projects
- Recommending adaptive management changes and applied research needs, where necessary, to meet the desired WUE goals
- Making projections of potential costs and benefits from WUE projects through 2007 and beyond for possible revisions of WUE goals and objectives.

Three subtasks are planned:

- 1. Assess past WUE performance: estimate the total costs and benefits of WUE activities since the California Bay-Delta Program began implementation.
- Assess WUE potential: estimate the total costs and benefits of WUE activities that are expected in the future, both for the California Bay-Delta Program's Stage 1 (through 2007) and until 2030.
- 3. Convene the WUE Science Application Advisory Committee (led by DWR) and the WUE Science Review Panel (led by CBDA).

The above tasks are scheduled to begin in Year 4 and continue in future years.

Cross-Program Relationships

WUE cross-program integration begins with the program elements' objectives. WUE objectives tier from the California Bay-Delta Program's water supply reliability, water quality, and ecosystem restoration. Consistent with this approach, the WUE element continues to coordinate with the following programs:

Ecosystem Restoration – Staff continues to coordinate with the ERP as needed. This includes meetings with State and Federal agencies, the California Water Plan, and interested stakeholders to develop uniform data collection and reporting procedures.

Storage, Conveyance, and Conjunctive Use – Staff continues to coordinate with the Storage, Conveyance, and Conjunctive Use Program as needed. This includes meetings with State and Federal agencies, the California Water Plan, and interested stakeholders to develop uniform data collection and reporting procedures.

Drinking Water Quality – Staff continues to coordinate with the Drinking Water Quality Program as needed. This includes meetings with State and Federal agencies, the California Water Plan, and interested stakeholders to develop uniform data collection and reporting procedures.

Environmental Justice – Staff continues to work with Environmental Justice representatives and/or the Environmental Justice Coordinator to conduct the following activities:

- Integrate Environmental Justice principles into the multi-year program plan.
- Integrate Environmental Justice goals and objectives into the WUE Subcommittee's activities.
- The WUE Subcommittee chair(s) and/or Program Manager will attend Environmental Justice Subcommittee meetings, as appropriate, based on the agenda.
- Include EJ community representatives in grant and loan selection committees.
- Include EJ criteria in proposal solicitation criteria.
- Take special measures to advertise Proposal Solicitation Packages to disadvantaged communities.

Stage 1 Funding

Water Use Efficiency Funding	Program Year							
(\$ in millions)	1	2	3	4	5	6	7	Total
State	\$18.56	\$32.94	\$45.94	\$96.27	\$55.20	\$38.77	\$6.67	\$294.35
Federal	\$25.39	\$25.47	\$18.06	\$13.22				\$82.14
Local/Water User	\$49.82	\$57.12	\$223.03	\$221.55				\$551.52
Revised Stage 1 (Actual & Expected Funding) 1	\$93.77	\$115.53	\$287.03	\$331.04	\$55.20	\$38.77	\$6.67	\$928.01
Original ROD (Aug, 2000) ²	\$31.0	\$62.0	\$299.0	\$641.0	\$641.0	\$641.0	\$641.0	\$2,956.0
Revised ROD (Dec, 2002) ³								\$2,956.0

Funding for Years 1-2 reflects actual State encumbrances & expenditures and federal obligations. Funding for Year 3 reflects final State and Federal budgets. Funding for Year 4 reflects proposed Governor's and President's budgets. Expected funding in Years 5-7 includes remaining state bond funds until spent and ongoing State base funding. Federal appropriations for Years 5-7 are unknown; therefore, federal funding is not included beyond Year 4. Local/Water User estimates are primarily local cost sharing for water recycling projects.

² Original Stage 1 funding estimates from the Record of Decision.

³ ROD estimates have not been revised. The Stage 1 estimates included in the January 2003 program tracking report are the same as the ROD.

Stage 1 Funding by Task

Water Use Efficiency Funding (\$ in millions)	Program Year							
	1	2	3	4	5	6	7	Total
Assurances, Science, Monitoring and Evaluation								
Science & Monitoring	\$0.18	\$1.05	\$0.54	\$2.54	\$2.50	\$2.50	\$0.62	\$9.93
Water Measurement	\$0.10	\$0.19	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.89
Quantifiable Objectives	\$0.04	\$0.10	\$0.06	\$0.10	\$0.06	\$0.06	\$0.06	\$0.48
Urban Certifications	\$0.04	\$0.19	\$0.12	\$0.12	\$0.12	\$0.12	\$0.12	\$0.83
Water Conservation and Recycling Loans and Grants Agricultural Loans								\$0.00
Agricultural Grants	\$8.94	\$2.43	\$16.44	\$31.25	\$15.27	\$15.40	\$1.53	\$91.26
Urban Loans								\$0.00
Urban Grants	\$7.98	\$10.58	\$25.67	\$22.33	\$15.27	\$15.40	\$1.53	\$98.76
Managed Wetlands Grants								\$0.00
Water Recycling Loans		\$12.00						\$12.00
Water Recycling Grants	\$73.30	\$79.50	\$237.93	\$268.31	\$17.40	\$0.71	\$0.63	\$677.78
Water Recycling Research Grants								\$0.00
Water Conservation and Recycling Technical Assistance								
Agricultural Technical Assistance	\$1.55	\$3.99	\$1.93	\$2.10	\$1.32	\$1.32	\$0.31	\$12.52
Urban Technical Assistance	\$1.21	\$3.17	\$1.29	\$2.40	\$1.37	\$1.37	\$0.36	\$11.17
Water Recycling Technical Assistance		\$1.75	\$2.57	\$1.41	\$1.41	\$1.41	\$1.03	\$9.58
Managed Wetlands Technical Assistance								\$0.00
Oversight & Coordination	\$0.43	\$0.58	\$0.36	\$0.36	\$0.36	\$0.36	\$0.36	\$2.81
Revised Stage 1 (Actual & Expected Funding) ¹	\$93.77	\$115.53	\$287.03	\$331.04	\$55.20	\$38.77	\$6.67	\$928.01
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Project Map

